

**PATENT APPLICATION** #6**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of

Toshiyuki IMAIZUMI et al.

Application No.: 09/359,643

Filed: July 26, 1999

For: VEHICLE WHEEL SUSPENSION

Notice of Allowance

Mailed: August 24, 2000

Batch No.: R11

Group Art Unit: 3611

Examiner: K. Rice

Docket No.: 103899

**REQUEST FOR RECONSIDERATION  
OF DISCLOSED INFORMATION**Director of the U.S. Patent and Trademark Office  
Washington, D.C. 20231

Sir:

Attached to the Notice of Allowance and Issue Fee Due were two initialed Form PTO-1449's. One dated October 14, 1999, by a Patent Office date stamp, indicated that Great Britain Patent Specification No. 1,193,713 had been considered. The second Form PTO-1449, date stamped January 3, 2000 lined out Great Britain Patent Specification No. 1,198,713 as being a duplicate citation. The note that it was a duplicate citation is correct. However, the identification of the considered reference is incorrect. The correct number is 1,198,713. It is respectfully requested that the Patent Office records be corrected so that the correct reference will appear on the face of the Letters Patent to issue from the above-identified application.

In support of this request attached hereto are copies of the initialed Form PTO-1449s as well as a copy of the first page of the identified reference showing the correct number.

Respectfully submitted,

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Registration No. P-46,604JAO:HWC/qlm  
Date: September 11, 2000OLIFF & BERRIDGE, PLC  
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Telephone: (703) 836-6400**DEPOSIT ACCOUNT USE  
AUTHORIZATION**Please grant any extension  
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## PATENT SPECIFICATION

1,198,713

DRAWINGS ATTACHED.

Date of Application (No. 33433/67) and filing Complete Specification: 20 July, 1967.

Application made in Germany (No. B88133 II/63c) on 22 July, 1966.

Complete Specification Published: 15 July, 1970.



1,198,713



Index at acceptance:—B7 D(2A2A, 2A4B1); F2 S(1E1A, 5H3A).

International Classification:—B 60 g 3/04.

## COMPLETE SPECIFICATION.

### Improvements in or relating to Vehicle Wheel Suspension Assemblies.

We, BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT, of Lerchenauerstrasse 76, Munich 13, Germany, a German Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a suspension assembly for an independently suspended wheel of a motor vehicle, said assembly including a telescopic hydraulic shock absorber forming a rectilinear guide and a coil spring arranged coaxially of the latter, the shock absorber being articulated at its upper end to the vehicle frame and having a wheel support rigidly fixed thereto towards its lower end.

Such suspension assemblies have the disadvantage that binding and frictional forces in the shock absorber prevent the response of the latter to small road shocks. These binding and frictional forces are produced by a bending moment being exerted on the shock absorber, due to the wheel load, the said moment causing a bending of the shock absorber piston rod and thus resulting in an increase of the bearing friction in the shock absorber. Since the binding and frictional forces which are set up are usually greater than the forces caused by the small road shocks, the shock absorber is unable to absorb these shocks. This condition results in the road shocks being transmitted without springing and undamped to the vehicle frame and thus the running behaviour and the travel comfort are impaired.

In order to avoid these disadvantages, it has already been proposed in connection with a suspension assembly for independently suspended, steered front wheels of motor vehicles (our prior patent No. 1,102,492) for

the axis of the helical spring to be offset in relation to the axis of the shock absorber which acts as a rectilinear guide. Due to this arrangement of the helical spring relatively to the axis of the shock absorber, a bending moment is exerted on the latter which, in the normal position of the vehicle, is of about the same value and opposite in sense to the bending moment exerted by the wheel load on the shock absorber, so that there is no binding between the two telescopic parts of the shock absorber even with small road shocks and thus the response of the shock absorber to small road shocks which is important for the travel comfort and running behaviour is improved.

The invention has for its object to provide a suspension assembly of the type indicated above, which also relieves the bending moment applied by the wheel load and to achieve this object with a minimum of expense in design and construction.

According to the present invention there is provided a method of mounting the helical spring of a telescopic strut type wheel suspension assembly which consists in stressing said spring asymmetrically of its axis so as to apply to said strut a bending moment in opposition to the bending moment applied by said wheel.

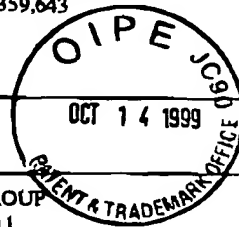
According to a further aspect of the invention there is provided a suspension assembly for an independently sprung wheel of a motor vehicle including a telescopic hydraulic shock absorber forming a guide and having a wheel support secured thereto which imparts a bending moment to said shock absorber and a coil spring associated with said shock absorber wherein said coil spring when installed in the suspension assembly is stressed, asymmetrically of its

[Price 5s. 0d. (25p)]

PART OF PAPER #2

Sheet 1 of 1

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|---|---|---|-------------------------------|
| Form PTO-1449<br>(REV. 8-83)  | US Dept. of Commerce<br>PATENT & TRADEMARK OFFICE | ATTY DOCKET NO.<br>103899                 | APPLICATION NO.<br>09/359,643 |
| INFORMATION DISCLOSURE STATEMENT<br><br>(Use several sheets if necessary) |   | APPLICANT(S)<br>Toshiyuki IMAIZUMI et al. |                               |
|   |   | FILING DATE<br>July 26, 1999              | GROUP<br>3611                 |



## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |   | DOCUMENT NUMBER | DATE    | NAME        | CLASS | SUB<br>CLASS |
|---------------------|---|-----------------|---------|-------------|-------|--------------|
| <i>[Signature]</i>  | 1 | 4,903,985       | 02/1990 | Muhr et al. | 28    | 124.145      |
|                     |   |                 |         |             |       |              |
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## FOREIGN PATENT DOCUMENTS

|                    |   | DOCUMENT NUMBER | DATE    | COUNTRY       | CLASS | SUB<br>CLASS |
|--------------------|---|-----------------|---------|---------------|-------|--------------|
| <i>[Signature]</i> | 2 | 48-39290        | 11-1973 | Japan         |       |              |
| <i>[Signature]</i> | 3 | 2642163         | 05/1997 | Japan         |       |              |
| <i>[Signature]</i> | 4 | 1,193,713       | 07/1970 | Great Britain |       |              |
| <i>[Signature]</i> | 5 | DE 3403882 A1   | 08/1984 | Germany       |       |              |
| <i>[Signature]</i> | 6 | 2 670 437       | 06/1992 | France        |       |              |

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

|                    |   |  |
|--------------------|---|--|
| <i>[Signature]</i> | 7 | Satoshi SUZUKI et al., "Approaches to Minimizing Side Force of Helical Coil Springs for Riding Comfort" February 26-29, 1996, pp. 15-22. |
| <i>[Signature]</i> | 8 | Satoshi SUZUKI et al., "Approaches to Minimizing Side Force of Helical Coil Springs in Suspension Design" August 28, 1995, pp. 19-27     |
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EXAMINER

DATE CONSIDERED

Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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|--|--|-------------------------------|
| Form PTO-1449<br>(REV. 8-83)<br><br>US Dept. of Commerce<br>PATENT & TRADEMARK OFFICE<br><br>INFORMATION DISCLOSURE STATEMENT<br><br>(Use several sheets if necessary) | ATTY DOCKET NO.<br>103899                  | APPLICATION NO.<br>09/359,643 |
|  | APPLICANT(S)<br>Toshiyuki [MAIZUMI] et al. |                               |
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| EXAMINER<br>INITIAL | DOCUMENT NUMBER      | DATE               | NAME                  | CLASS | SUB<br>CLASS |
|---------------------|----------------------|--------------------|-----------------------|-------|--------------|
|                     | <del>4,003,985</del> | <del>02/1990</del> | <del>Muh et al.</del> |       |              |
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## FOREIGN PATENT DOCUMENTS

|  | DOCUMENT NUMBER      | DATE               | COUNTRY                  | CLASS | SUB<br>CLASS |
|--|----------------------|--------------------|--------------------------|-------|--------------|
|  | <del>1,198,713</del> | <del>07/1970</del> | <del>Great Britain</del> |       |              |
|  | EP 0 791 491 A1      | 08/1997            | Europe                   |       |              |
|  | EP 0 526 689 A1      | 02/1993            | Europe                   |       |              |
|  | FR 2 742 830 A1      | 06/1997            | France                   |       |              |
|  | DE 42 03 658 A1      | Stet               | Germany                  |       |              |
|  | FR 2 540 586 A1      | 08/1984            | France                   |       |              |
|  | EP 0 728 602 A1      | 02/1996            | Europe                   |       |              |
|  | JP A 8 142622        | 06/1996            | Japan (Abstract Only)    |       |              |

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

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